

Hye-Young Jo

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Research Interests

My research explores how generative AI and extended reality can enable embodied learning and creative living. My work focuses on enabling dynamic communication with content and transforming everyday living into creative activity through interactive systems where media dynamically adapt, evolve, and respond to users' actions, context, and intentions.

Keywords: Human-Computer Interaction; Human-AI Interaction; Creativity Support Tools; Generative Agents; AI-driven Content Adaptation; Embodied AI; XR Interaction; Augmented Instruction

Education

University of Colorado Boulder

Ph.D. student, Computer Science
Supervisor: Ryo Suzuki

Aug 2024 - Present

Korea Advanced Institute of Science and Technology (KAIST)

Master of Science, Industrial Design, *Best Master's Thesis Award*
Supervisor: Andrea Bianchi

Sep 2020 - Aug 2022

Seoul National University

Bachelor of Fine Arts, Painting and Media Arts, *Cum Laude*
Supervisor: Inhwon Oh, Cheol-Woong Sim

Mar 2011 - Feb 2016

Publication

Summary: 8 full papers published in CHI (4), UIST (2), ISMAR (1), and HCIK (1), along with 1 extended abstract in UIST. One additional full paper is on arXiv.

[C8] Map2Video: Guiding Real-World-Grounded AI Video Generation

Hye-Young Jo, Mose Sakashita, Aditi Mishra, Ryo Suzuki, Koichiro Niinuma, Aakar Gupta
UIST 2026: ACM Symposium on User Interface Software and Technology ([video](#)) ([PDF](#))

[C7] CinemaWorld: Generative Augmented Reality with LLMs and 3D Scene Generation for Movie Augmentation

Keiichi Ihara, DaeHo Lee, Manato Abe, **Hye-Young Jo**, Ryo Suzuki

UIST 2026: ACM Symposium on User Interface Software and Technology ([PDF](#))

[C6] TingleTouch: Touch Guidance through Electrical Stimulation in Resistance Training

Dong-Uk Kim, **Hye-Young Jo**, Hankyung Kim, Ryo Suzuki, Seungwoo Je, Yoonji Kim

CHI 2026: ACM Conference on Human Factors in Computing Systems (to appear) ([video](#)) ([PDF](#))

[P1] Generative Lecture: Making Lecture Videos Interactive with LLMs and AI Clone Instructors

Hye-Young Jo, Ada Zhao, Xiaolan Liu, Ryo Suzuki

arXiv 2025 ([video](#)) ([PDF](#))

[C5] Designing Hand and Forearm Gestures to Control Virtual Forearm for User-Initiated Forearm Deformation

Yilong Lin, Han Shi, Weitao Jiang, Xuesong Zhang, **Hye-Young Jo**, Yoonji Kim, Seungwoo Je

ISMAR 2025: IEEE International Symposium on Mixed and Augmented Reality ([video](#)) ([PDF](#))

[C4] CollageVis: Rapid Previsualization Tool for Indie Filmmaking using Video Collages

Hye-Young Jo, Ryo Suzuki, Yoonji Kim

CHI 2024: ACM Conference on Human Factors in Computing Systems ([video](#)) ([PDF](#))

[E1] TrainerTap: Weightlifting Support System Prototype Simulating Personal Trainer's Tactile and Auditory Guidance

Hye-Young Jo, Chan Hu Wie, Yejin Jang, Dong-Uk Kim, Yurim Son, Yoonji Kim

UIST 2023 Adjunct: ACM Symposium on User Interface Software and Technology ([video](#)) ([PDF](#))

[C3] FlowAR: How Different Augmented Reality Visualizations of Online Fitness Videos Support Flow for At-Home Yoga Exercises

Hye-Young Jo, Laurenz Seidel, Michel Pahud, Mike Sinclair, Andrea Bianchi

CHI 2023: ACM Conference on Human Factors in Computing Systems ([video](#)) ([PDF](#))

[C2] Design of Virtual Reality Application for Interaction Prototyping Remote Education

Hye-Young Jo, Wooje Chang, Hoonjin Jung, Andrea Bianchi

HCIK 2022: The Human-Computer Interaction Society of Korea ([video](#)) ([PDF](#))

Best Paper Award

[C1] GamesBond: Bimanual Haptic Illusion of Physically Connected Objects for Immersive VR Using Grip Deformation

Neung Ryu, **Hye-Young Jo**, Michel Pahud, Mike Sinclair, Andrea Bianchi

CHI 2021: ACM Conference on Human Factors in Computing Systems ([video](#)) ([PDF](#))

Honorable Mention Award

Research Experience

[Autodesk, HCI and Visualization Team](#)

May 2026 - Aug 2026

Research Intern, Mentors: Frederik Brudy, David Ledo.

[Fujitsu Research of America, Converging Lab](#)

May 2025 - Oct 2025

Research Intern, Mentors: Mose Sakashita, Aditi Mishra, Aakar Gupta, Koichiro Niinuma.

[CU Boulder, Programmable Reality Lab](#)

Aug 2024 - Present

Graduate Research Assistant, Mentor: Ryo Suzuki

[Chung-Ang University, Artifab Lab](#)

Jan 2023 - July 2024

Research Assistant, Mentor: Yoonji Kim

[KAIST, Make Lab](#)

Sep 2020 - Sep 2022

Graduate Research Assistant, Mentor: Andrea Bianchi

Fellowship and Awards

Google Ph.D. Fellowship

2025-2027

Full tuition and stipend (\$85,000/year)

CU Boulder Computer Science Department

2026

Conference Support funds (\$1,500)

Ralph J. Slutz Student Excellence Award

2025

Slutz Excellence Fund (\$1,000)

Graduate and Professional Student Government

2024

Conference travel support (\$500)

Gary Marsden Travel Award

2024

CHI conference travel support (\$3,000)

Best Master's Thesis Award

2023

Department of Industrial Design, KAIST

Best Paper Award

2022

HCIK 2022 [C2]

Top Research Award

2022

The joint research seminar of four universities: Seoul National University, KAIST, Sogang University, and Korea University [X6]

Excellence Award

2021

Korea Metaverse Developer Contest 2021 [X6]

IDEA Design Award 2021

2021

Bronze, Digital Interaction, Mobile Clinic Module Control UI/UX (awarded to Make lab)

iF Design Award	2021
Winner, User Interface (UI), User Experience (UX), Mobile Clinic Module Control UX/UI (awarded to Make lab)	
Honorable Mention Award	2021
CHI 2021 [C1]	
Top Award	2016
Green Computer Academy	
Alumni Award	2016
Seoul National University Alumni Association	

Work Experience

Research Assistant at Chung-Ang University Jan 2023 - July 2024
 Developed a creativity support tool [C4] and workout support tool that simulates a trainer's tactile and auditory guidance in weightlifting [E1].

Film VFX Compositor and VR/AR Generalist at [Dexter Studios](#) Sep 2016 - Apr 2020
 Worked in film post-production's compositing team, integrating computer graphic assets, matte painting, and live-action footage to make a final image [F1-F6].
 Created various AR/VR projects, mainly as a generalist, involved in 3D character design, level design, visual scripting, lighting, and look development [X1-X2, X4].

Service

Reviewer
 CHI 2025-2026, DIS 2026

Outreach and Leadership
 CU Boulder Prospect Affiliate Match Program, helping prospective students prepare their PhD applications 2025
 Seoul National University Mentoring Program, helping international students adjust to campus life 2012

Invited Talks and Lectures

Fujitsu Research of America Lunch Seminar Oct 2025
 Grounding Generative Video in Real-World Geographies for Spatial Consistency

KAIST Make Lab Seminar May 2025
 Reimagining How We Create and Consume Content

Seoul National University Human-Centered Computing Systems Lab Seminar May 2025
 Reimagining How We Create and Consume Content

CU Boulder CSCI 7000 How to Hack Almost Anything Class Guest Lecture Feb 2025
 Utilizing AI Services and APIs for Coding and Virtual Agent Creation

KAIST ID220 Interaction Prototyping Class Guest Lecture Oct 2022
 DIY Arduino paper cases without 3D printing, using Adobe Illustrator, Autodesk Fusion 360, and Blender.

Kookmin University Department of Entertainment Design Career Seminar Nov 2019
 Transitioning from Art and Film VFX to VR Content Creation

Media Coverage

CU Boulder Graduate School News Oct 2025
["CU Boulder graduate student named a Google PhD fellow"](#)

Microsoft Research Blog

May 2021

[“Microsoft Research collaborates with KAIST in Korea to explore bimanual interactions with haptic feedback in virtual reality”](#)

Teaching and Mentoring

Teaching Assistant

CSCI 1300 Starting Computing (C++), Instructor: Rhonda Hoenigman
ID220 Interaction Prototyping (Arduino)

Fall 2025

Fall 2022

Undergraduate Research Assistant

Chan Hu Wie, Yejin Jang, Dong-Uk Kim, Yurim Son (Chung-Ang University)

Film and XR Content

Summary: I created traditional 2D films and 3D XR content as VFX Compositor [F1-F6], CG generalist [X1-X4, X6], Art director [X5], developer [X3], and camera operator [X4].

Films

[F6] <Along with The Gods: The Last 49 Days>, Director: Yong-Hwa Kim, 2018, *2018 Grand Bell Awards - Best Visual Effects, over 12 million viewers in South Korea alone as of 2024.*

[F5] <1987: When The Day Comes>, Director: Jun-Hwan Jang, 2017, *2018 Blue Dragon Film Awards - Top Film Award, over 5 million viewers in South Korea alone as of 2024.*

[F4] <Along with The Gods: The Two Worlds>, Director: Yong-Hwa Kim, 2017, *2018 Blue Dragon Film Awards - 4 Crowns, including Technology Award, over 11 million viewers in South Korea alone as of 2024.*

[F3] Kung Fu Yoga, Director: Stanley Tong, 2017

[F2] <Real>, Director: Sa-Rang Lee, 2017

[F1] <Fabricated City>, Director: Kwang-Hyun Park, 2017

Immersive Content

[X6] VR Boxing Game <Meta-Boxing> ([video](#)), Supervisor: Woontack Woo, *Excellence Award at Korea Metaverse Developer Contest 2021, Top Research Award at the 2022 joint research seminar of four universities - Seoul National University - KAIST - Sogang University - Korea University*

[X5] VR Exhibition <Being City>, Supervisor: Tae-Kyung Yoo

[X4] AR Mobile App <LGU+ 5G AR>, Supervisor: Sun-Gu Kim

[X3] VR Exhibition <Fashion For Help>, Supervisor: Young-Mo Son

[X2] AR Exhibition <The Tide>, Supervisor: Sang-Hyoun Lee

[X1] VR Toon Film <The Tide>, Director: Tae-Kyung Yoo, *Officially invited to the "New Frontier" category at the 2019 Sundance Film Festival.*

Art Exhibitions and Live Performances

Summary: I participated in the following art events as an artist [A1-A5, A7] and VJ [A6].

[A7] Group Exhibition <Lapses>, Platform-L Contemporary Art Center, Curator: Eobchae, 2018 (funded by Hyundai's ZERO1NE project).

[A6] Live VJ Show <We Play>, Sangsangmadang, Supervisor: Hoon-Gyu Park (Parkpunk), 2016

[A5] Invited Exhibition <Don't fake it, believe it>, Mythtaka Museum, 2016

[A4] Group Exhibition <Dirt Luv for Graduation>, Seoul National University, 2016

[A3] Group Exhibition <8-bit>, Seoul National University, 2015

[A2] Group Exhibition <Crawling>, Seoul National University, 2015

[A1] Group Exhibition <The Great Exodus>, Seoul National University, 2015

Skills

Programming

C#, Python, JavaScript, C++, R, HTML/CSS

Graphic Design

2D/3D image manipulation (Nuke, Adobe Creative Suite), video editing (Final Cut Pro), 3D modeling, rigging, animation (Blender, Maya, Fusion 360, Substance Painter), projection mapping (Resolume), live video mixing (VDMX)

XR Prototyping

Unity, Unreal Engine, WebXR

Fine Art

Drawing, painting (watercolor, acrylic, oil), sculpture, casting, printmaking, photography

Research Methods

affinity diagramming, A/B testing, focus group interviews, ethnography, contextual inquiry, participatory design

Languages

Korean (native), English (TOEFL 106/120), French (DELFB1)